IN THE CLAIMS:

1-21. (Cancelled)

22. (Currently Amended) A method~~Method~~ for determining the redox state of an anode of a high-temperature fuel cell or a reaction surface of a reformer, which anode or reaction surface is in contact with a gas flow containing at least one of H_2, CO and CH_4 and is coated with or made from a catalyst material, comprising the steps of

[-] (a) bringing at least a first resonator of a piezoelectric sensor device into contact with said gas flow of said high-temperature fuel cell or said reformer, a surface of the first resonator ~~being furnished with~~having a coating which is oxidized or reduced in said gas flow,

[-] (b) measuring at least one change in ~~the~~a resonance ~~properties~~property of the first resonator, and

[-] (c) inferring the redox state of the anode of said high-temperature fuel cell or the reaction surface of said reformer from a change of the resonance properties of the first resonator.

23. (Currently Amended) The method~~Method~~ according to claim 22, wherein ~~a change in the~~the resonance property is resonance frequency ~~of the first resonator is measured~~.

24. (Currently Amended) The method~~Method~~ according to claim 22, ~~wherein~~including a step of controlling or adjusting an operational

parameter of the high-temperature fuel cell depending on the measured change ~~of~~ resonance ~~properties, at least one operational parameter of the high-temperature fuel cell or the reformer is controlled or adjusted~~property.

25. (Currently Amended) The method~~Method~~ according to claim 22, ~~wherein at least one~~comprising bringing a second resonator of the piezoelectric sensor device ~~is brought~~ into contact with the gas flow containing at least one of H_2, CO and CH_4, said second resonator having a coating which is chemically stable, and wherein a frequency difference between the first and second resonator of the sensor device is used as a measure for the redox state of said anode or said reaction surface.

26. (Currently Amended) The method~~Method~~ according to claim 25, ~~wherein the~~comprising measuring a value of resonance resistance of one of the first and second resonators~~, preferably the resonator with the chemically stable coating, is measured~~ and the measured value is used as a measure for ~~the pressure in the~~ gas flow pressure.

27. (Currently Amended) The method~~Method~~ according to claim ~~22~~25, ~~wherein the~~comprising measuring a value of resonance frequency of one of the first and second resonators~~, preferably the resonator with the chemically stable coating, is measured~~ and the measured value is used as a measure for ~~the temperature in the~~ gas flow temperature.

28. (Currently Amended) A device~~Device~~ for determining the redox state of an anode of a high-temperature fuel cell or a reaction surface of a reformer, which anode or reaction surface is coated with or made from a catalyst material, ~~wherein at least one~~comprising a first resonator of a piezoelectric sensor device which is ~~positioned~~positionable in ~~the~~a gas flow of said high-temperature fuel cell or said reformer, said first resonator ~~being provided with~~having an oxidizable and reducible coating thereon, and ~~wherein there is provided~~ a unit for measuring at least one change ~~of the~~in a resonance ~~properties~~property of said first resonator, the measured ~~value~~change being a measure for the redox state of the anode of said high-temperature fuel cell or of the reaction surface of said reformer.

29. (Currently Amended) The device~~Device~~ according to claim 28, wherein the oxidizable and reducible coating of the first resonator is made from material identical with the catalyst material of the anode of the high-temperature fuel cell or the catalyst material of the reaction surface of the reformer.

30. (Currently Amended) The device~~Device~~ according to claim 29, wherein the oxidizable and reducible coating of the first resonator is made from nickel-cermet, Ni/NiO, Cu/CuO, Pb/PbO, Co/CoO, Ag/AgO, or Pd/PdO.

31. (Currently Amended) The device~~Device~~ according to claim 28, wherein the piezoelectric sensor device comprises at least one second resonator which is ~~placed~~positionable in the gas flow of said fuel cell or said reformer, said second resonator having a coating which is chemically stable in said gas flow.

32. (Currently Amended) The device~~Device~~ according to claim 31, wherein the chemically stable coating of the second resonator is a noble metal or an oxide layer.

33. (Currently Amended) The device~~Device~~ according to claim 32, wherein the chemically stable coating is an oxide layer ~~comprises~~comprising at least one oxide of a group consisting of SiO_2, TiO_2, $A1_2O_3$, CaO, MgO, and MnO.

34. (Currently Amended) The device~~Device~~ according to claim 28, wherein the piezoelectric sensor device is positioned on ~~the~~an outlet side of the anode gas flow of the high-temperature fuel cell.

35. (Currently Amended) The device~~Device~~ according to claim 28, wherein the piezoelectric sensor device is placed in ~~the~~an anode gas space of the high-temperature fuel cell.

36. (Currently Amended) The device~~Device~~ according to claim 28, wherein the piezoelectric sensor device is placed on the inlet or outlet side of the gas flow into or from the reformer.

37-39. (Cancel)

40. (Currently Amended) The~~Piezoelectric sensor~~ device according to claim ~~38~~28, wherein the first and second resonators are configured as BAW- or SAW-resonators.

41. (Currently Amended) The~~Piezoelectric sensor~~ device according to claim ~~37~~28, wherein the first resonator is configured as a BAW-resonator with an oxidizable and reducible coatings on both opposite surfaces.

42. (Currently Amended) The~~Piezoelectric sensor~~ device according to claim ~~37~~28, wherein the chemically stable coating and the oxidizable and reducible coating are ~~applied~~present on two areas of one piezoelectric crystal element.